

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/062420 A3

(51) International Patent Classification⁷: **B08B 3/02**
(21) International Application Number:
PCT/US2004/000112
(22) International Filing Date: 5 January 2004 (05.01.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/438,537 7 January 2003 (07.01.2003) US

(71) Applicants and
(72) Inventors: **CHASEN, James, E.** [US/US]; 45 Florence Avenue, West Haven, CT 06516 (US). **LARSEN, Scottt** [US/US]; 18 Sugar Hill Road, Newton, CT 06470 (US). **MELITO, M., Anthony** [US/US]; 64 Walnut Avenue, Shelton, CT 06468 (US). **MERCURIO, Frank** [US/US]; 57 Park Pond Circle, Wallingford, CT 06492 (US). **MOWERS, Stephen, D.** [US/US]; 53 Nutmeg Lane, Fairfield, CT 06824 (US). **SIMMONS, Timothy, G.** [US/US]; 340 Watrous Point Road, Old Saybrook, CT 06475 (US).

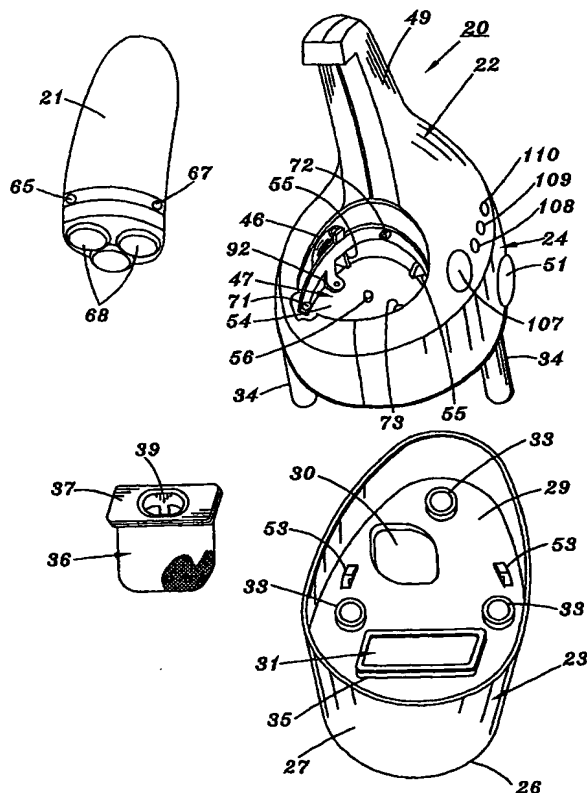
(74) Agent: **STOLTZ, Melvin, I.**; 51 Cherry Street, Milford, CT 06460 (US).

(71) Applicant (for all designated States except US): **REMINGTON PRODUCTS COMPANY, L.L.C** [US/US]; (A Limited Liability Company of Delaware), 60 Main Street, Bridgeport, CT 06604 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR CLEANING THE CUTTING SYSTEM OF AN ELECTRIC SHAVER



(57) Abstract: By providing a shaver receiver and supporting housing (22) which is constructed for enabling cleaning fluid to be delivered directly to the interior of a shaver in a highly efficient manner, a fully integrated shaving cleaning system (20) is realized which is capable of providing automated cleaning of the shaver (21) in an efficient and effective manner. In accordance with the present invention, the cleaning fluid is forced through portals (65, 66, 67) formed in the shaver (20) for enabling the fluid to be forcibly delivered into the hair pocket (70) of the shaver (20), thereby enabling the surfaces of the hair pocket (70), the cutting foils (69), and the cutting blades (68) to be completely and thoroughly cleaned, with the fluid draining out of the shaver (20) through the cutting foils (69). In addition, the present invention is constructed for thoroughly and completely cleaning both rotary shavers (21) and foil shavers (121).



MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

- (88) **Date of publication of the international search report:**
7 October 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US04/00112

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B08B 3/02

US CL : 134/111

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 134/111, 62, 116, 135, 186, 166R, 169R, 155

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,172,416 A (SIMMONS) 09 MARCH 1965 (09.03.1965), see cols. 1-12.	1-45
A	US 3,365,267 A (MEKINEY et al.) 23 JANUARY 1968 (23.01.1968).	1-45
X	US 3,584,633 A (ARRIGO) 15 JUNE 1971 (15.06.1971), see col. 1-4.	1-45
A	US 4,045,963 A (TAYLOR) 25 OCTOBER 1977 (25.10.1977).	1-45
A	US 4,549,352 A (OCHIAI et al.) 29 OCTOBER 1985 (29.10.1985).	1-45
A	US 4,631,825 A (KURIYAMA et al.) 20 DECEMBER 1986 (30.12.1986).	1-45
A	US 5,143,101 A (MOR) 01 SEPTEMBER 1992 (01.09.1992).	1-45
A	US 5,649,556 A (BRUAN) 22 JULY 1997 (22.07.1997).	1-45



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

06 July 2004 (06.07.2004)

Date of mailing of the international search report

11 AUG 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

FRANKIE L. STINSON

Telephone No. (703) 308-0661

[Signature]
Tear

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,305,391 A (HOSER) 23 OCTOBER 2001 (23.10.2001).	1-45
A	US 6,371,136 A (HOSER) 16 APRIL 2002 (16.04.2002).	1-45
A	FR 2,568,111 A (BARDEL) 31 JANUARY 1986 (31.01.1986).	1-43
A	DE 2,429,372 A (BAUMGARTNER) 08 JANUARY 1976 (08.01.1976).	1-43
A	JP 06-178876 A (TANIOKA et al.) 28 JUNE 1994 (28.06.1994).	1-43

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00112

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.